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JAN MAYEN EXPEDITION OF 1911

BY

W. S. C. RUSSELL

The Jan Mayen Expedition of 1911 was organized by J. Foster Stackhouse, F.R.G.S., F.R.S.S. The party under his command consisted of Mrs. Stackhouse and seventeen men. The destination was Jan Mayen; the object, to make a series of meteorological observations between Iceland and Jan Mayen and to survey the coast of the island for data to supplement the work of the Austrian Expedition of 1882-3. Mr. Stackhouse had had in preparation for some time the construction of a relief map of Jan Mayen and he desired to make a personal observation of the coast lines and take some measurements.

The expedition contained a meteorologist, a zoologist, two ornithologists, a geologist, two color photographers, a botanist, a mountain climber, a cartographer, a cinematograph operator and an artist. A suitable vessel had been chartered, but a short time before the party assembled at Newcastle, England, the charter had to be cancelled through a whim of the owner. We were obliged to take what we could find at short notice,—the *Matador,* 232 tons gross register. She was a private steam yacht, a first-class sea boat, but of insufficient bunker capacity for our purpose. The charter gave a coal capacity of 40 tons. By coaling on the east coast of Iceland and carrying a load on deck, we hoped to reach the island and have a few days for work on the coast survey, providing the waters were free from ice.

We sailed from Newcastle at 6 A.M., July 30. The course was laid through the Orkney Islands, and the Faroes to Seydisfjord, Iceland, that we might easily reach a coaling station in case of stress of weather, which would prematurely deplete our coal supply. We had on board the Icelandic mail and carried an expedition flag, modelled after that of the Arctic Club of America, with the British Jack in place of the Stars and Stripes. We left the mail at Seydisfjord on Aug. 3, and coaled. We here made the distressing discovery that in place of forty tons, as stated in the charter, our bunkers held only twenty-four tons.

A violent storm on the east coast of Iceland detained us in port two days. During this time the botanist, the ornithologist and the geologist explored the valley at the end of the fiord and the mountains on either side. A large amount of good material was collected for the museums represented by the expedition. Among the minerals was an excellent meteorite, which, as far as we knew, was the first one ever reported from Iceland. It is now in the private collection of Baron Axel Klinckowström in Stockholm.

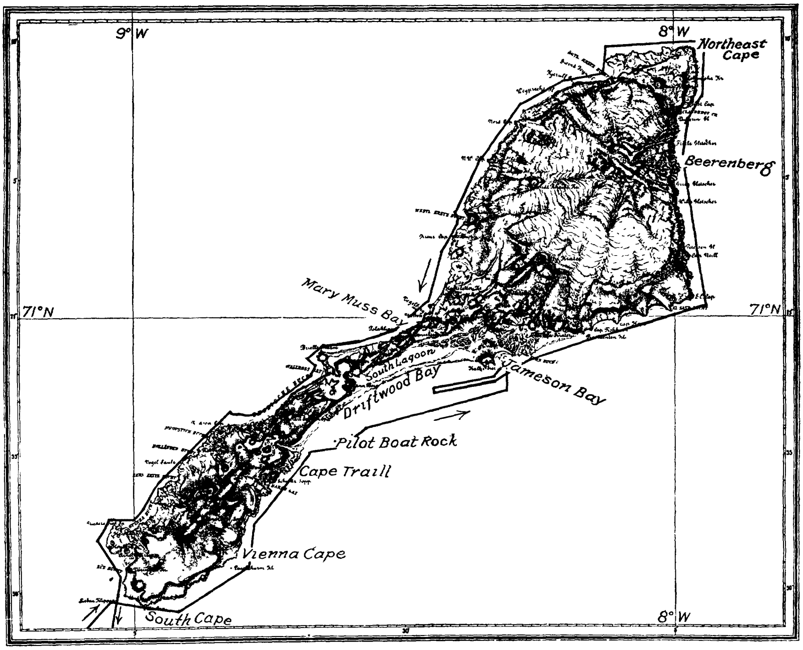

FIG. 1—Map of Jan Mayen based on the map of the Austrian Expedition of 1882–83. 1:500,000 (1 in. = 7.89 miles). The full line accompanied by arrows indicates the course of the *Matador*, August 11–12, 1911.

Early on Aug. 5, we put to sea with the storm still raging. During the afternoon the wind continually increased and the sea became so heavy that we sought the shelter of Langanes, the northeast point of Iceland. Here we were held for 36 hours in the open bay of Eidisvik. During this period the scientists continued their collections and fully explored the peninsula. The most noticeable feature is the driftwood. There were many logs of great size, some of which bore the marks of the ax, but most of them had been torn up by the roots in spring freshets and swept out to sea. They are of the same character as those I afterwards examined in Driftwood Bay, Jan Mayen. This material evidently came from the great Siberian rivers. Carried out to sea with the spring floods, they became embedded in the ice and slowly drifted with the pack ice as did the *Fram* with Dr. Nansen and the Melville-Bryant Cask No. 6, deposited on the ice off Point Barrow, Sept. 13, 1899 and picked up by an Icelander at Cape Raudagnupr, northwest of Eidisvik, on June, 1905. All this material must have drifted to the north of Franz Josef Land and Spitzbergen. It then met the more open ice stream that comes down east of Greenland and drifted southward, some of it landing on Jan Mayen and some of it in this bleak bay. The water-worn and ice-scarred timber provides sufficient material for the Icelanders of the north to construct their houses and furnishes an abundant amount of fuel. Much of it is transported into the interior, still more is left upon the shore to decay or again be washed out to sea to find lodgment in the Faroe Islands.

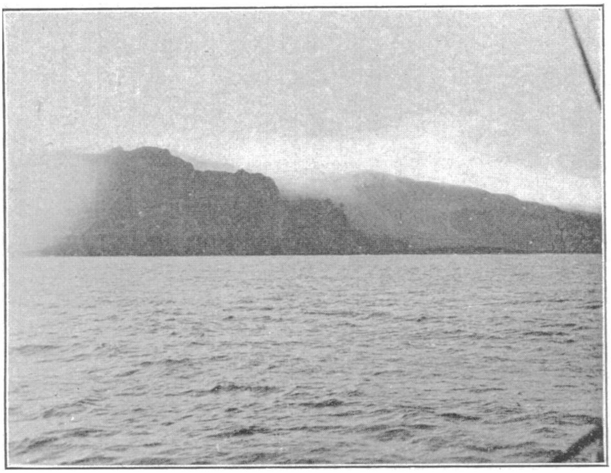

FIG. 2—Entrance to Driftwood Bay. Heavy fog hanging over Beerenberg.

The state of the weather, the condition of the sea and the shortened supply of coal seemed to forbid our further progress. We held a consultation, and it was voted to return to one of the eastern fiords, recoal and then, if the sea did not improve, to set south to the Westmann Islands and devote a week to cartographical and geological work. While the coast line of Iceland has been carefully surveyed by the Danes, the Westmann Islands have been neglected and there is opportunity for scientific work there.

A little after midnight on Aug. 8, we entered Faskrudsfjord. We were unable to coal at once as the *Ask* was tied up to the only jetty. The day was, however, profitably spent. Among geologists, Iceland is famed for zeolites. I have collected many fine specimens in the interior during a trip of over 1,000 miles, but I have never seen such excellent specimens as I dug out of the bed of a brook which flows down a ravine here, formed by a fault in the lava. We also obtained another specimen very rare in Iceland, of fossilized wood of the Tertiary Period. The specimen was filled with minute zeolites.

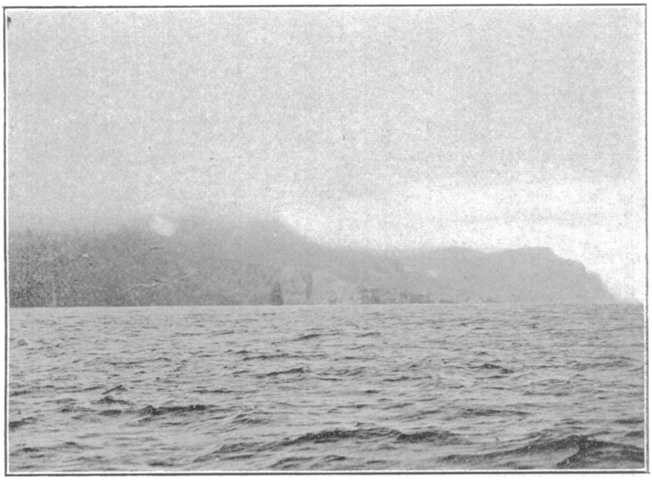

FIG. 3—General character of the Jan Mayen coast, rising straight up from the sea. Pilot Boat Rock, the dark pinnacle of rock rising from the sea in the middle of the picture.

We learned by telephone that weather conditions north of Iceland were a little more favorable. With our bunkers full and a good deck load we decided to make one more attempt to reach Jan Mayen. We crossed the Arctic Circle, blew the whistle, and cast overboard a record in a sealed bottle. Hourly observations of air and sea temperatures, the reading of the barometer, direction and velocity of the wind, compass course and log dial were taken. The velocity of the wind increased and the *Matador* was tossed about so much that we spread all the sail possible to steady the ship. The water temperature steadily decreased but no ice was in sight. Our Icelandic friends warned us that there was much ice in the north waters.

At midday, Aug. 11, a bank of fog loomed in the north. In it somewhere we knew must lie Jan Mayen. A little later we got a glimpse of South Cape and changed our course to bring us just east of the land. Bird life was very abundant and the birds being unacquainted with man flew fearlessly about us and through the rigging. We did not, however, like the French expedition of 1892, "have to push them out of the way to make progress."

When we reached Vienna Cape, the fog lifted so as to give us a view of the summits of the southern craters. The sun shone brightly on Driftwood Bay just ahead and we hoped for a view of Beerenberg. Slowly we steamed close to the shore. A series of photographs was taken to form a full panorama and many sketches and bearings were taken. Everyone was busy.

Reaching Jameson Bay we tried to land but found it impossible on account of the heavy breakers. Turning back to Driftwood Bay we anchored opposite the South Lagoon. It seemed impossible to make a safe landing but Stackhouse, Beetham, Swan and the writer volunteered to make the attempt. We pulled the gig to the edge of the breakers. The sea was running so high that when we were in the trough of the sea we were invisible from the deck of the *Matador*. Slowly we worked southward, past Pilot-Boat Rock to the cliffs near Cape Traill but with no success. This was also the experience of *La Manche* party in 1892. Longingly we examined the heaps of driftwood and thought of the big bonfire we were to make to dry out the fog and spray and efface the chill of the past three days. The ragged lava ridges patched with snow, the gullied mounds of ashes spotted with pale green moss, the abundance of fearless birds flitting between us and the shore, the water courses rushing down from the melting snows, the beautiful sunlight on the beach, the quiet, lonesome beauty of the stately cliffs, the impenetrable fog shrouding the upper peaks, these were the elements of charm on a dreary, lonesome coast, that lured us across the breakers. But prudence forbade. After a long pull we regained the *Matador*. During our absence the guns had been busy and a large number of birds were strewn over the deck awaiting the knives of the taxidermists.

It was 9 P.M. For hours we had cast wistful eyes towards Beerenberg, the most northern volcano in the world, rising 8,000 feet above the sea. Beerenberg is a rare, a magnificent spectacle. For a few moments the fog opened near the summit, though the middle portion of its glacier-covered slopes was hidden. The sun shone resplendent on the mighty dome of ice, suspended like a truncated cone, apparently in mid air. Then the curtains were swiftly drawn and we were not again to see the wonders of that view from the east. At the same time the fog lifted from the lower and mid-slopes and we saw only the mighty glaciers reaching down from the mist into the pounding surf.

At midnight we rounded Northeast Cape with the sun shining brightly and obtained a momentary view of the summit towards the south but nothing, not even the grandeur of this view, can equal the splendor of that eastern vision. Slowly we proceeded around the entire coast, hoping to effect a landing at Mary Muss Bay, the home of the Austrian Expedition. The heavy sea prevented. The Austrian station buildings, partly covered with sand, loomed in the mist. We planned to wait a few days here for the sea to subside that we might land some supplies we had taken to leave in the station and report upon the condition of those left by the Austrians twenty-eight years ago. We made a careful estimate of our coal and were dismayed to find that we had a scant supply to reach the Iceland coast. We decided to start at once. The wisdom of this decision was shown some days later when we steamed into Seydisfjörd with only enough coal left to steam two hours. For some time before our departure

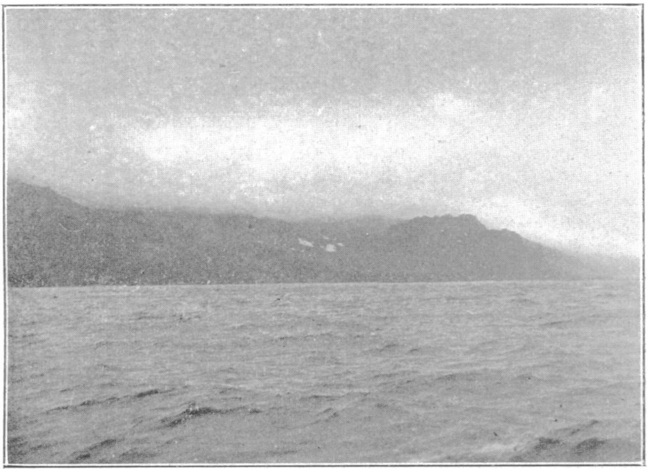

FIG. 4—Cape Traill.

we blew our whistle continuously on the chance that there might be some shipwrecked fishermen waiting for a friendly ship to take them back to inhabited lands.

We saw no sea ice of any description around Jan Mayen. The waters were entirely free. Nor was there any ice blink to indicate the presence of ice beyond the horizon. I am unable to find any record of such free water about Jan Mayen as we experienced. Some expeditions have failed to get nearer than thirty miles of the land on account of the ice barrier.

The island is entirely volcanic and of the same formation as the Reykjanes Peninsula in Iceland. If there is any subterranean connection between the two islands it is very deep seated, for the sea is 1,000 fathoms deep a little to the south of Jan Mayen. A remarkable thing about the formation of the island, which is about thirty miles long, is the great depth of water but a little way from the shore. Its volcano comes straight up from this great deep and the fifteen miles of lava ridge south of it is but the overflow of lava, reaching southward like the bone in a lamb chop. The mountain is entirely covered with glaciers, which are fed by the continually falling snows, the condensation of the heavy fogs that perpetually envelop its cold and lofty summit.

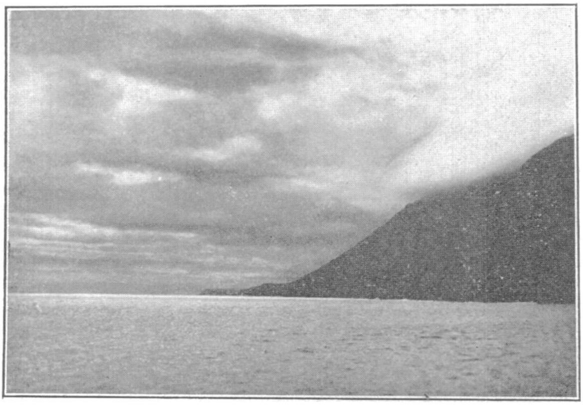

FIG. 5—Sunlight through the rifted fog lying low off the east of Iceland.

Botanically, ornithologically and geologically we thoroughly explored three of the fiords of the east coast of Iceland. One of them, Brimnesfjord, is little known, an elevated, glacial valley. We secured many museum specimens.

We established the fact that ice-free waters do sometimes exist entirely around Jan Mayen, the charts and the records to the contrary.

We secured a valuable collection of photographs and sketches of the entire east coast and made cinematograph pictures of the shore and the glaciers as we steamed along.

We made a complete meteorological record across the ocean from Langanes to Jan Mayen and return. Taken in connection with the work done by *La Manche* these data are useful. Says the commander of that expedition: "A series of observations is important, but it is only one point of the changing series of seasons, and science has great interest in reviewing the work done ten years ago." Our records were taken nineteen years after those of *La Manche* so that we now have three "points" with enough time between to make them scientifically valuable for comparison, being taken over the same stretch of sea at the same time of the year. A table is given below for comparison of the last two "points."

We failed to land, but the mere act of landing without time to do systematic work would have been useless. We might have taken some of the twenty tons of coal left by the Austrians but this would have been a crime. This coal is for the relief of shipwrecked mariners or for any party wishing to winter.

READINGS OF BAROMETER, TEMPERATURE OF THE AIR AND OF THE SEA FROM LANGANES, NORTHEAST COAST OF ICELAND, TO JAN MAYEN.
STEAM YACHT *Matador*, AUGUST 10–12, 1911.

DATE.	HOUR.	POSITION		BAROMETER.	TEMPERATURE	
		LAT.	LONG.		AIR.	SEA.
August 10	5 A.M.	66° 30′ N.	14° 30′ W.	762.0 mm	5.8° C.	6.3° C.
	7 A.M.			761.49	6.0°	7.2°
	12 M.	67° 15′	13° 15′	761.5	5.5°	6.4°
	2 P.M.			762.0	6.0°	7.5°
	9 P.M.			762.25	4.3°	7.2°
August 11	12 A.M.	68° 45′	11° 30′	763.01	5.3°	6.5°
	7 A.M.			763.27	5.2°	6.5°
	12 M.	69° 10′	9° 45′	765.82	5.0°	6.1°
	2 P.M.	off South Cape		765.82	5.0°	5.5°
	6 P.M.	70° 57′ Driftwood Bay	8° 30′	765.82	6.0°	3.5°
	9 P.M.			766.57	5.0°	4.3°
August 12	12 A.M.	71° 12′ Northeast Cape	7° 57′	765.82	6.0°	3.5°
	3 A.M.	71° 0′ Mary Muss Bay	8° 30′	766.06	5.4°	5.0°
	6 A.M.	70° 50′ Southwest Cape	9° 3′	766.06	6.2°	6.0°
	7 A.M.			766.06	6.5°	6.0°
	2 P.M.			767.08	8.0°	7.2°
	9 P.M.			767.08	7.7°	7.0°

NOTES.

A comparison of the barometer readings of 1882–3, 1892 and 1911 for the corresponding season of the year yields interesting results.

Mean Barometer in August, 1882...........754.87 mm.
" " " " 1892...........763.5
" " " " 1911...........766.92

The Isobar for this season and locality is charted by Davis as 756.92. Our mean barometer reading for two weeks off the east coast of Iceland was...... 756.66, which corresponds to the given Isobar.

Again, there seems to be a great ocean eddy between Langanes and Jan Mayen as shown by our sea temperatures, state of the sea and winds. The data cannot be given here for the deduction. The limits of this eddy are fifty miles north of Iceland and fifty miles south of Jan Mayen. The south flowing Arctic Stream along the east Greenland coast, and the northwest drift of waters off the west coast of Norway undoubtedly contribute to this condition.

HISTORICAL.

1607. HENRY HUDSON is usually credited with the discovery, having found the island on his return from Spitzbergen. It was long known as "Hudson's Touches."

1610. CORNELIUS DOETTS, a Dutchman, discovered the island, according to a chart printed at Amsterdam by Dirck Peters, which is now in the Museum of Bergen.

1611. JAN MAYEN, a Dutchman, discovered the island, according to one authority, and gave it his name. By this name it has been known since 1611.

1611–1690. Jan Mayen was a station for the Holland Whale Fishery. See *The Dutch in the Arctic Seas*, by S. R. Van Campen, for a full account.

1633–34. Seven Dutch sailors tried to winter on Jan Mayen. All died of scurvy.

1817. WILLIAM SCORESBY, Jr., roughly surveyed the island and wrote a brief account.

1856. LORD DUFFERIN, in the *Foam*, visited the island and landed for a few moments, after a hard fight with the ice. He did no scientific work.

1856. LA RONCIÈRE, a Frenchman, in the *Reine-Hortense*, closely following Dufferin, gave up the attempt when about 125 miles from the island on account of coal shortage.

1861. DR. BERNA, German, made a landing, but retreated on the sudden rising of the sea.

1869. KOLDEWAY, German, in the *Germania*, tried to land, but failed on account of the heavy sea.

1882–3. WOHLGEMUTH, in the *Pola*, established one of the thirteen International Circumpolar Stations in Mary Muss Bay on the 71st parallel. The party were chiefly engaged in meteorological work. They surveyed the island and constructed a fairly accurate chart. Our observations in 1911 show many inaccuracies.

1899. A. G. NATHORST, a Swede, on his expedition to the east coast of Greenland and Spitzbergen, stopped at Jan Mayen for a few hours.

1891. CHARLES RABOT, a Frenchman, in the *Châteaurenault*, starting from the French fishing station in Faskrudsfjord on the east coast of Iceland, was turned back by the ice barrier. He was accompanied by Auguste Gratzl, an Austrian, of the expedition of 1882–3. Their object was to examine the condition of the stores left there in 1883.*

1892. BIENAIMÉ and RABOT, French, again accompanied by Gratzl, in the *Manche*, visited Jan Mayen, entered Mary Muss Bay, and effected a landing on the 27th of July. They stopped but a few hours.

1911. STACKHOUSE Expedition in the *Matador* reached the island on August 11th, It is the purpose of this party to return in 1912, complete the survey of the land, make ocean soundings and, if the ice permits, make the Liverpool coast of Greenland.

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* Greely, Handbook of Arctic Exploration, in referring to this expedition, places Faskrudsfjord, a fiord in Iceland, in Jan Mayen.

HANGING VALLEYS OF THE YOSEMITE*

BY

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COMPARISON OF THE YOSEMITE WITH OTHER VALLEYS.

The Yosemite Valley has often been compared with other valleys in an attempt to throw light on the question of its origin. Such comparison, to be of value in the present discussion, must be made between similar valleys which are known to have developed under different conditions. It is clearly inadmissible, for example, to compare the Yosemite with other similar valleys which have also been occupied by glaciers; or with V-shaped gorges in non-glacial regions. For this reason the comparisons mentioned by Turner (318-319) all seem to me inappropriate. So far as can be learned from maps and descriptions, every one of the valleys mentioned by him was either certainly or probably occupied by ice; or has no typical hanging tributary valley; or is a V-shaped young gorge with narrow bottom. Similarly, the discussion of hanging valleys given by the same author on an earlier page (271) is unconvincing, inasmuch as the hanging valleys cited are very short, or have partially graded their lower courses; and all are tributary to a main stream which occupies a narrow-bottomed V gorge of pronounced gradient. They

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*Concluded from p. 837, November *Bulletin*, 1911.